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***The Science of Screenwriting: The Neuroscience Behind Storytelling Strategies*, by Paul Joseph Gulino and Connie Shears. Bloomsbury Academic, 2018, 164 pp.**

Levi Dean

Writing a screenplay is hard. From my own experiences in practice and lecturing, I am confident in saying that the majority of those who have written screenplays, whether successfully or not, would agree. So why would we undertake this arduous task? For the sake of the story. It is widely accepted that there is a story in all of us; a uniqueness that relates directly to our individuality of experiencing the world as we see it. The hard part is how we tease and filter this on to the page in a way that engages others. There are a myriad of “how to guides” promising screenwriters the magic formula to ensure their script has every chance of provoking a bidding war amongst Hollywood productions. Unfortunately, as many of us have discovered, there is no magic formula. Thankfully, Chapman University’s Paul Joseph Gulino, screenwriting professor, and Connie Shears, cognitive psychologist, have presented an interdisciplinary approach to screenwriting that retires magic and, instead, employs science in their book *The Science of Screenwriting: The Neuroscience Behind Storytelling Strategies*.

Gulino and Shears differentiate their book by peeling away the formulaic mask and explore the “why” behind successful conventions through the application of neuroscience. They present a set of narrative techniques and, occasionally, examine key screenwriting texts such as Christopher Vogler’s *The Writer’s Journey: Mythic Structure for Writers*, Robert McKee’s *Story: Style, Structure, Substance and the Principle of Screenwriting*, Syd Field’s *Screenplay: The Foundations of Screenwriting* and Blake Snyder’s *Save the Cat! The Last Book on Screenwriting You’ll Ever Need*. Their specific aim is to uncover “the cognitive and perceptual processes going on in the brain of the reader or viewer when reading a script or watching a film” (1). From the introduction to the closing pages, Gulino and Shears impart their knowledge of cognitive processes to help screenwriters craft “effective and emotionally impactful material” (1). Through scientific observations they debunk some of the myths surrounding current screenwriting conventions, whilst also explicating the phenomena behind a number of what they argue are essential norms. Though, be warned, this is not a screenwriting manual with a magic formula. The authors are stark in their rhetoric; the science is clear: there exists no blueprint to guarantee commercial success.

The book is comprised of eleven chapters and like most screenwriting books, particular sections will resonate with you more or less depending on your own experiences as a screenwriter or viewer. For example, the authors’ analysis helped me to reflect on why I disengaged with the

Netflix series *When They See Us* (Ava DuVernay, 2019) after the pilot episode. The series depicts the true story of how five teenage boys were wrongly convicted of raping a woman in New York's Central Park. The pilot episode pulls no punches in representing the brutal reality of how these underprivileged African American teenage boys endured police brutality and continuous unlawful treatment that goes beyond the imagination. While watching, I found myself disengaging, resulting in an enormous sense of guilt. I searched my conscience, reminding myself of the many reasons of why it is important to watch this series, cross-examining my own morality. However, Gulino and Shears revealed that morality was secondary in my decision making. They instead point to the neurological processes of why narratives need to sequence a specific flow of positive and negative events to elicit and sustain audience engagement. They conclude that "it is critical that a moment of high emotion be contrasted to a moment that is nonemotionally relevant" (45). The researchers then provide detailed scientific methods that screenwriters can employ when scripting a sequence of emotionally negative material to help avoid audience disengagement.

It should be noted that, whilst there are some new insights, the book primarily expounds upon established screenwriting conventions. You should expect to experience "light bulb" moments surrounding screenwriting norms that may now be second nature, as they reveal the secrets behind their efficacy by almost always presenting from the audience perspective, subtly encouraging you to perceive screenwriting techniques as a viewer. They believe that "a screenwriter who knows how to create and manipulate anticipation on the part of the viewer has a tremendous advantage in keeping the viewer's attention—and interest—for the entire screenplay" (13).

Structurally speaking, *The Science of Screenwriting* takes the reader step by step, delving deeper into each new layer of cognitive science with each chapter. In Chapter 1, they lay the foundation of cognitive science by describing (with the use of some clever analogies) the relevant functions of different parts of the brain. They explore two types of processing that occurs in our brains, bottom-up and top-down. Bottom-up processing denotes sensory information, such as what is being experienced within an environment through hearing or seeing. This is then fused with our own personal experiences in top-down processing. Gulino and Shears explain how a person may see a snarling dog (bottom-up), but because they previously had a positive experience with a dog which initially snarled at them (top-down), they were not afraid. With this example, the authors demonstrate how human cognition relies heavily on shortcuts, based on past experiences, to make instantaneous decisions about specific stimuli. Gulino and Shears further explore how these shortcuts evidence the importance of story schemas and why viewers engage with a narrative during the embryonic stages.

Story schemas are understood as a narrative shortcut that spectators refer to when engaging with a familiar genre. In this sense, if we consider the television anti-hero, a viewer may engage with him because of their previous viewing experience. They may be familiar with on-screen characters such as Tony Soprano (James Gandolfini, *The Sopranos*, 1999–2008), Dexter Morgan (Michael C. Hall, *Dexter*, 2006–2013) and Walter White (Bryan Cranston, *Breaking Bad*, 2008–2013) and, as a result, decide relatively quickly that they will feel allegiance towards this new anti-hero. However, it is important to note that not all scholars agree upon the significance of story schemas. Margrethe Bruun Vaage, author of *The Antihero in American Television*, disputes the relevance of story schemas and argues it is more plausible that over time viewers become "partial

to the protagonist's point of view, and start to like him due to the effects of familiarity" (59). Vaage likens this to a new friendship. Over time, as an individual learns more about a new friend, they become more engaged with them.

Gulino and Shears, however, indirectly discredit Vaage's notion by building upon their research into neural shortcuts, revealing that viewers' previous experiences with a genre will, in fact, influence their initial engagement (top-down processing). The authors cement this assertion by pointing to specific expectations audiences have surrounding the sequencing of certain events within a genre. Writers who use narrative schemas can take advantage of these expectations to craft a screenplay that is intuitively familiar (top-down processing), but also to subvert narrative conventions to ensure audiences remain "on the edge of their seats" (17). In short, Gulino and Shears' assertion is more credible than Vaage's because, whilst the idea that viewers become more fond toward a character overtime is probable, it fails to explain why viewers engage with a narrative in its early stages. Vaage's belief also disregards scientific evidence that confirms humans intuitively rely on neurological shortcuts in their everyday life.

An additional area to which the authors pay attention is emotion. They build upon research conducted by leading scholars, such as Murray Smith's *Engaging Characters: Fiction, Emotion, and the Cinema* and Noël Carroll and William Seeley's "Cognitivism, Psychology, and Neuroscience: Movies as Attentional Engines". The importance of having a focus on emotions is brilliantly articulated by Craig Batty, who states "if the audience does not connect with a character and feel his or her emotions, the narrative is merely a series of hollow actions" (7). Gulino and Shears present the finding from neuroscientist, Professor Donald W. Pfaff, to explicate why viewers are susceptible to feeling for the characters on screen. Pfaff maintains, according to Gulino and Shears, that this is because "a human being, in certain circumstances, blurs the distinction between another individual's experiences and his or her own" (23). This blurring is a direct result of "the brain structures called the anterior cingulate cortex and the insula" which "are involved in our attention to pain—not only our own, but also the pain of others" (24). Chapter 6 focuses heavily on emotions in which the authors break down the cognitive processes of why audiences are more likely to be satisfied by a feature film instead of a short film. The longer duration of a feature film is noted to provide the audience with more reward for their emotional engagement.

It should be pointed out that the authors stray away from the lens of the audience in Chapter 8 to focus instead on the idea of the screenwriter as a mad genius. They propose that "dopamine may be the neurochemical of creativity" (118). When linking everything we have learned in the final chapter, George Lucas is the "mad genius" case study. The authors examine how *Star Wars* (1977) employed screenwriting functions explored throughout the book, while also referring to science to explain how Lucas broke a number of rules, but still achieved audience engagement. The most obvious example being the information dump (exposition) presented at the beginning of the film. Though rest assured if you are not a *Star Wars* fan, this book analyses a broad range of film and television shows, including *Toy Story* (John Lasseter, 1996), *Breaking Bad*, *Avatar* (James Cameron, 2009) *The Social Network* (David Fincher, 2010), *Gravity* (Alfonso Cuarón, 2013), *Silver Linings Playbook* (David O. Russell, 2013), *Captain America: The Winter Soldier* (Joe Russo, 2014) and *Still Alice* (Richard Glatzer and Wash Westmoreland, 2014). Gulino and Shears also go back through the decades, analysing classical genre films such as *Double Indemnity* (Billy Wilder, 1944), *Psycho* (Alfred Hitchcock, 1960), *Lawrence of Arabia* (David Lean, 1962) and

Goldfinger (Guy Hamilton, 1964). In doing so, the authors reveal how numerous popular films throughout cinematic history have successfully entertained audiences by exploiting the same cognitive processes.

Once insights into cognitive science have been unveiled and analyses of films have been saturated, the authors will set you off on your way into the land of unknown that is screenwriting. Gulino and Shears make it clear that there will need to be experimentation, as well as trial and error, adding:

The key for going forth and creating is to temporarily forget the many lessons learned in this volume, get emotionally engaged with your creative impulses (experiment with how best to generate this; often listening to music can help), and pour it out on the page without attempting to analyze it in light of narrative concepts. (157–8)

After reading this book, screenwriters should feel a sense of confidence, knowing that while writing a successful screenplay is a serendipitous process, their creative decisions will be grounded in science. The only improvement I can suggest to the authors is that the book would benefit from being a little longer in order to provide space to examine the science behind successful secondary characters. This, however, should not diminish the excellence that Gulino and Shears achieved in generating new knowledge to the field of screenwriting.

It should, therefore, be no surprise that I recommend this read to all relevant stakeholders orbiting the world of screenwriting. As a screenwriter you will be met with sentences that can be described analogously to specks of gold dust. Educators may benefit from explaining the “why” behind a number of screenwriting norms that may encourage students to deliberate more seriously about particular creative decisions. And this text is, of course, a great introduction to anybody who wants to take a first step in understanding the science behind storytelling principles.

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